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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,735	03/16/2004	Seung-un Kim	239/166 DIV	1171

7590

09/08/2004

LEE & STERBA, P.C.  
SUITE 2000  
1101 WILSON BOULEVARD  
ARLINGTON, VA 22209

EXAMINER
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MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/800,735	Applicant(s) KIM ET AL.	
	Examiner Sylvia R MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2004.  
2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 16-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/16/04 7/29/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanoue et al (US 6,319,099).

Tanoue et al teaches an apparatus and method for feeding slurry.

Regarding claim 16: Tanoue et al further teaches a method of supplying chemical solutions to a chemical injection part in a semiconductor manufacturing process, comprising: Supplying a plurality of chemical solutions from a corresponding plurality of chemical solution supply sources (bottle 1 and 2); Respectively providing a pressure to a plurality of chemical solution supply sources (see col. 3 lines 10-14); recycling the plurality of chemical solutions from the plurality of chemical solution supply sources through a corresponding plurality of recycle lines (13a and 13c see col. 7 lines 1-14) and preventing coagulation of the plurality of chemical solutions (see col. 8 lines 39-45), the plurality of recycle lines being connected to an associated plurality of chemical solution supply sources; Injecting the plurality of chemical solutions from the chemical solution supply sources into a chemical injection part (3a, 3c, and 3e) through a plurality of branch lines using the pressure; and

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respectively measuring/controlling flow rates of the plurality of chemical solutions supplied to the chemical solution injection part, flow rate control valves 7a-7d, 7g-7j, 7x, and 7y).

Regarding claim 17: Tanoue et al teaches a method of supplying chemical solutions further comprising a step of mixing the measured/controlled chemical solutions just before supplying the chemical solutions to the chemical solution injection part, see Fig. 1.

Regarding claim 18: Tanoue et al teaches the step of respectively measuring/controlling the flow rates comprising the steps of a) detecting the flow rates of chemical solutions flowing into the feed lines and generating flow rate data signals indicating the detected flow rates of each respective chemical solution; and b) controlling the flow rate control valves by means of the control signals to control the flow rate of the chemical solutions, see col. 7 lines 34-53.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanoue et al (US 6,319,099) in view of Karlsrud et al (US 5,498,196).

The teachings of Tanoue et al were discussed above.

Regarding claim 19: Tanoue et al fails to teach displaying the measured flow rates.

Karlsrud et al teaches the method and apparatus is controlled by the computer 103. Computers are known in the art to comprise monitors or display means as an interface between the data and the operator. The motivation to provide a display means in the method of Tanoue is that it provides a real-time means of monitoring the progress of the manufacturing process and allows one to act accordingly. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the process of Tanoue et al with the display means of Karlrud et al.

Regarding claim 20: Tanoue et al fails to teach a step of generating an alarm for warning an operator when the measured flow rate exceeds a permissible error range of a required flow rate.

#### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 571-272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763

September 3, 2004